

REPORTS

ON THE

OTTAWA AND FRENCH RIVER

NAVIGATION PROJECTS.

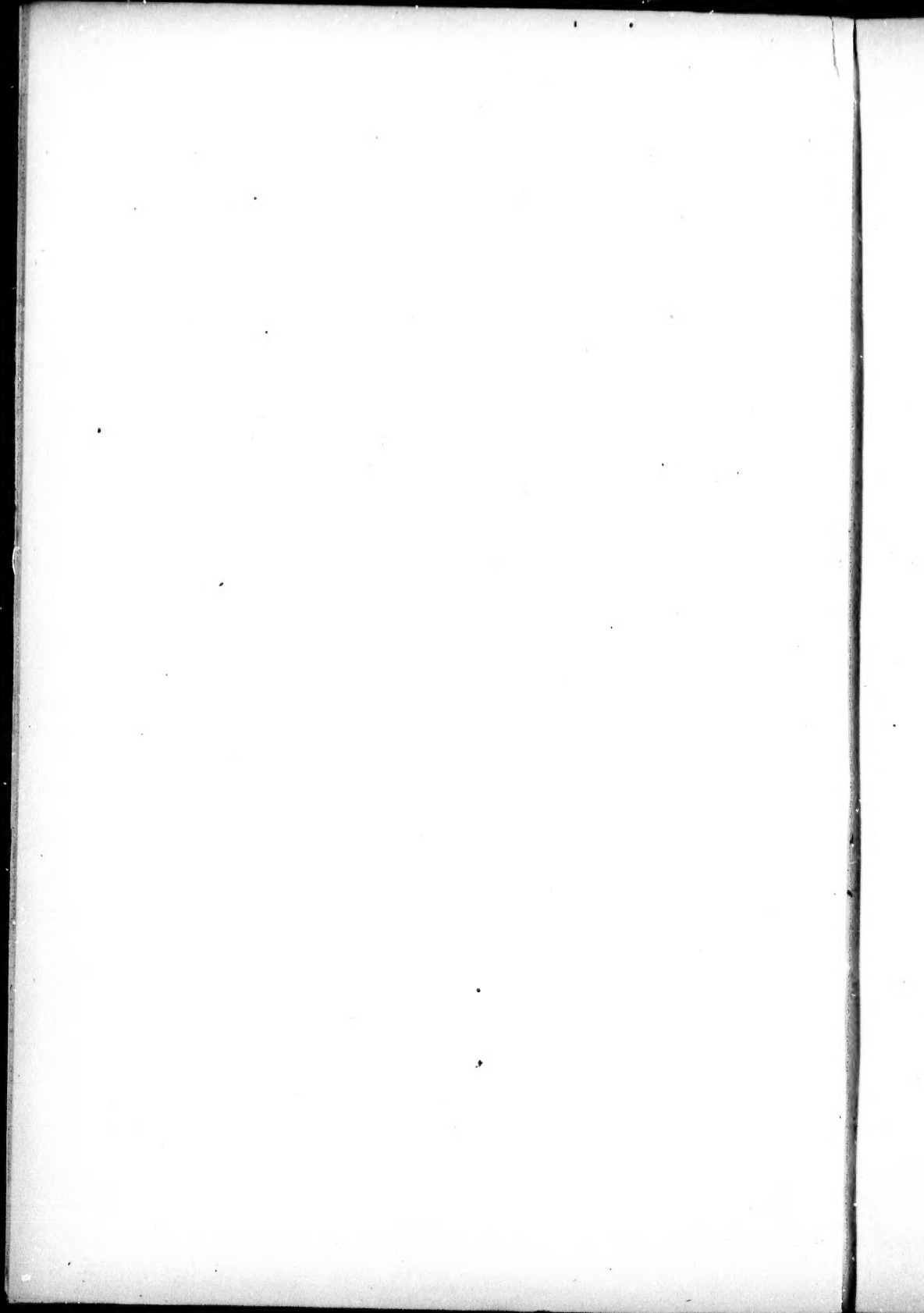
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1863.



Report of the Sub-Committee, (consisting of Messrs. H. L. ROUTH, Chairman, Hon. GEO. MOFFATT, JOHN ESDAILE, IPA GOULD, W. P. McLAREN, WALTER SHANLY, J. H. JOSEPH, JOHN GRANT, A. COWAN, and THOS. RYAN,) nominated on 19th March 1863, to the Committee of the Board of Trade appointed for the reception of the Delegates from Illinois and Wisconsin.

Your Sub-committee having carefully considered the important question referred to them—that of an improved navigable communication between Lakes Huron and Michigan and the St. Lawrence River, as the outlet to the ocean,—now beg to report that they recommend as the most eligible route to be adopted, that surveyed in 1856-7 by Walter Shanly, Civil Engineer, and in 1858-9 by T. C. Clarke, Civil Engineer : namely, From the mouths of the French River, on the Georgian Bay, by way of Lake Nippissingue and the Matawan and Ottawa Rivers to Montreal.

The relative distances between the furthest west Lake-port, Chicago, and our sea-port of Montreal, by the existing (Welland Canal) route, and by the proposed new line of communication by the Ottawa, compare as follows :

1st. WELLAND ROUTE.

Lake Navigation.....	1145 miles.
River do	132 “
Canal do	71 “

Total distance Chicago to Montreal. 1348 miles.

2nd. OTTAWA ROUTE.

Lake Navigation (including Nippissingue)	575 miles.
River do	347 “
Canal do	58 “ *

Total distance Chicago to Montreal. 980 miles. .

Difference in favor of Ottawa Route.. 368 miles.

* This is the length of Canal estimated by Mr. Shanly. Mr. Clarke in his report reduces the canalling required to about thirty miles.

And carrying our comparisons a step further we have, from Chicago to New York,

3rd. THE ERIE CANAL ROUTE.

Lake navigation	Chicago to Buffalo	1000 miles.
Canal	do Buffalo to Troy	850 "
River	do Troy to New York	150 "
Total distance Chicago to New York		1500 miles.
"	Chicago to Montreal by the Ottawa	980 "

Difference of distance in favor of Montreal. 520 miles.

Trans-Atlantic distances also compare favorably for us :

New York to Liverpool	2980 miles.
Montreal to Liverpool	2740 "
Quebec to Liverpool	2580 "

Difference in favor of Montreal..... 240 miles.
and in favor of Quebec..... 400 "

Chicago to Liverpool by Lake Erie and New York	4480 miles.
Chicago to Liverpool by Ottawa & Gulf of St. Lawrence	3720 "

Difference in favor of Ottawa and
Gulf route..... 760 miles.

The leading advantages to be secured by such a line of interior navigation as it is proposed to open, are to be classed under the following heads.

1st. TIME SAVED.—Because by this route grain could be taken from all ports on Lake Michigan and delivered to sea-going vessels in Montreal two days sooner than by the Welland route, or than by any other route that can be constructed : and in fully eight days less time than is required to lay down in the Harbour of New York a cargo loaded in Chicago or Milwaukee. The better condition for final transfer to Ocean vessels in which the grain will come to hand after the shorter as compared with the longer inland voyage is a point that will be conceded by all shippers, and is one of such moment that it should be prominently kept in view in contrasting the merits of the proposed new route with the existing and more circuitous ones between Lake Michigan and tide-water.

2nd. EXPENSES SAVED.—In the item of Freight-charges alone, the Montreal or Quebec merchant purchasing grain in Chicago or Milwaukee,

can effect an average saving of fully four cents, after allowing a liberal estimate for tolls, on each bushel as compared with what it now costs him to bring it round by way of the Welland Canal: while that which now goes from the same points to New York, by way of Lake Erie and the Hudson, at a cost, taking the average of the last eight years, of twenty-seven cents per bushel, can be delivered at the ship's side in our harbour for fifteen cents, or in Quebec for eighteen cents per bushel, and, as already observed, in superior shipping order, not only on account of the shorter time it has been afloat, but also owing to the more favorable atmospheric conditions to which it has been subjected, in its passage through the cooling waters of the Ottawa.

As an index to what the saving in freight would amount to, even now, at the above differences in rates we subjoin the following statement of grain, and flour reduced to grain, forwarded last year from Chicago, and received, by water only, at Montreal in 1862, and at New York in 1861.

Forwarded from Chicago by Lake and Railroad...	56,477,104 bush.
Total Receipts at Montreal by Canal only.....	15,227,878 "
" " at New York from Canals only..	55,905,344 "

A statement of the rates of Freight that have prevailed on the Lakes and Canals over a period of three years ending with 1862, will be found in Appendix A, as also a comparative statement of Ocean Rates from Montreal and Quebec to Liverpool, and from New York to Liverpool for the last three years.

Under the head of *Insurance*, a letter from Theodore Hart, Esq., Agent in this city for Inland Marine Insurance Companies, (Appendix B,) gives valuable information. It may safely be calculated that the opening of the Ottawa route would reduce the existing rates of Insurance by fully thirty per cent.; the length of *lake*, or in other words, *dangerous navigation* (from Chicago to the French River) being but 550 miles, against 1145 miles on the Welland and 1000 miles on the New York route.

With so obvious a gain both in time and money as the new line of communication would ensure, alike to the producer in the west and to the buyer in Canada, and with the trade fast outgrowing existing means of transport, the time would seem to have arrived, when the most earnest and energetic measures should be adopted by all parties interested, for placing this great project on a practicable basis; and foremost in that consideration, the capacity of the navigation best adapted to the trade, and its probable cost, have engaged the attention of your Sub-Committee. To guide them to conclusions on these important points, they have had before them the Reports of Walter Shanly, Civil Engineer, and of T. C. Clarke, Civil

Engineer ; both printed by order of the Legislative Assembly, the one in 1858, the other in 1860.

Mr. Shanly recommends a navigation of the size represented by Locks of 250 feet in length by 50 feet in width,—capable of passing vessels drawing 10 feet of water.

Mr. Clarke proposes Locks of similar length, 250 feet, but considers 45 feet as sufficient width, while he would provide for 12 feet draught of water.

Experience in the Grain-carrying trade here, goes to show that trans-shipment at the foot of Lake navigation from large steam and sailing vessels into river-craft, is not only *not* found to be an inconvenience, but is adopted by choice as the cheapest, most facile, and safest mode of delivering the grain in our harbour. Vessels loading on the Upper Lakes now rarely come below Kingston, there transferring their cargoes to barges ; the largest class of which now used in the trade measure 150 feet in length by 30 in width, draw nine feet of water, and carry some 22,000 bushels of wheat. Increasing their length to 160 feet and their beam to 33 feet, their draught could be lightened to eight feet and their load-capacity still preserved ; and by further increase in length and beam, within the limits of the largest sized lock proposed, their capacity could be increased to 35,000 bushels without adding to the reduced (8 feet) draught of water.

Mr. Shanly estimated the cost of completing his scheme of navigation at \$24,000,000.

Mr. Clarke, not however taking into account the enlarging of the Lachine canal, or the removal in Lake St. Louis of the obstructions to a 12 feet, or even to a 10 feet navigation, makes a very much lower estimate ; resorting largely to the plan of damming up the Ottawa and Matawan Rivers to avoid expensive excavations. His estimate is a little over \$12,000,000.

We deem it prudent, for the present, to place the question of cost in its least favorable light by assuming the highest estimate, and having requested Mr. Shanly to ascertain what the probable difference in cost between an eight feet and a ten feet navigation would be, his answer (given in full in appendix C.) may be briefly stated thus :

“ Leaving the locks of the dimensions as to length, width, and depth contemplated in his original estimate, but providing throughout, elsewhere, for eight feet draught only, would reduce the cost of the undertaking to \$16,000,000.

And if the locks were to be reduced in size to, say, 160 x 33 x 8 feet depth, a further reduction in cost to the extent of about \$2,000,000 might be effected, bringing the entire outlay within the limit of \$14,000,000.”

The deepening of a navigation, even where most practicable, is necessarily an expensive undertaking. To obtain the largest desirable carrying capacity, therefore, for river and canal craft, without recourse being had to great draught of water, the means of giving them increased length and width, with the increasing demands of trade, should be kept in view. Your Sub-Committee are accordingly of opinion, that the size of lock designed by Mr. Shanly, 250 feet long by 50 feet wide, is that best adapted for the "French River and Ottawa navigation;" and with a view to the future adaptation of the route to ten feet available depth throughout, it is recommended that in the construction of the locks the full depth of ten feet be also adhered to, and so obviate the necessity for the pulling down and sacrificing the original cost of such expensive structures, when further improvements come, as doubtless they will come, to be developed.

For the general depth between locks, throughout the canal and river portions of the navigation, your Sub-Committee believe that, for the present, it will be amply sufficient to provide for floating vessels of eight feet loaded draught.

Thus far we have been treating of the subject under consideration exclusively in its bearings on the immense and ever-increasing grain trade of Lake Michigan; a stand-point from which our brethren of the Western States have a common interest with ourselves in devising the means of opening up this new and advantageous avenue to the Atlantic Ocean; but we must not omit, at the same time, to point out to our own people the amount of *local* good that may be expected to result from the completion of the project;—in developing the immense manufacturing resources along the route;—in creating a new market, in the largest lumber market in the world (Chicago) for the sawed lumber of the Ottawa, and, by reducing the distance and cost of carriage one half, largely reducing the whole cost of those supplies of the necessaries of the lumberman's life, pork and flour, for which he is almost wholly dependent on the west. The mineral deposits too, so lavishly interspersed throughout that section of the province watered by the line of navigation, would soon attain a tangible value, adding largely to the wealth and resources of Canada; while from the copper regions of Lakes Huron and Superior, thus, as it were, brought so much nearer to our doors, we might fairly look forward to large accessions to the trade of Quebec and Montreal;—and lastly, why should not the importing merchants of these cities count upon the time when they shall have close business relations with the Western States, in supplying, in part at all events, their demand for European manufactures, and so furnishing return cargoes for the vessels that bring their products to our ports.

Statistical information in relation to the lumber trade of Chicago and Quebec, and the Grain and Provision trade of the west, will be found in Appendix D.

Having endeavoured to depict in general colours the certain advantages to be gained from the opening of this new channel of trade, the next point engaging the attention of your Sub-Committee has been as to how those advantages are to be secured ; what means can be devised to bring about the accomplishment of the project ? and firstly :—

We would direct your attention to the fact that a select committee of the House of Assembly has recently been struck expressly to “ investigate the subject of a navigable communication between Montreal and Lake Huron by way of the Rivers Ottawa and Matawan, Lake Nippissing and the French River ;” and would recommend that the Board of Trade and citizens of Montreal generally should take measures for urging upon their representatives in parliament, and through them upon the select committee of the House, the importance of the question at issue ;—a question in which are bound up not alone the interests of certain localities immediately contiguous to the chain of navigation, but, it may be asserted, one in which every patriotic Canadian, from the extreme east to the extreme west, is equally concerned ; embracing as it does the momentous problem of whether the teeming products of the western and northwestern States, are to find their safest, shortest and cheapest outlet to the ocean, through Canadian waters, or are for ever to “ to pass by on the other side ”—through channels almost wholly artificial ;—owing their very existence to that spirit of enterprise, patriotism and perseverance which must be grievously wanting in us, if we continue to leave unimproved and unused the superb chain of inland waters with which nature has so munificently endowed our country.

That a project of so great magnitude, and aiming at such broad results, should be undertaken purely as a provincial work would seem to accord with the policy recognised by ourselves in the improvement of the St. Lawrence navigation, and by the state of New York in the construction of her great and remunerative system of canals ; but, failing government *adoption* of the scheme, your Sub-Committee would suggest that government *aid*, at all events, may reasonably be asked for and accorded, by the granting of such powers to a chartered company, strengthened by a donation of provincial lands, as might induce private enterprise to take it up. Grants from the public domain have been made in the United States in furtherance of works less national in their character than the one we are debating :—The “ Illinois Central ” and “ Pacific ” Railroads, are instances ; the latter of

which in addition to a land-grant of 8,400 acres per mile, being further supported by a direct subsidy, in the shape of United States bonds, to the amount of \$16,000 per mile. The provincial guaranty of even a low rate of interest on the cost of the "French River and Ottawa Navigation," would ensure its completion.

The geographical advantages of the Ottawa route cannot fail to confer as has been above pointed out, important *indirect* benefits, not alone on our own merchants and carriers and through them on the community at large, but also on our neighbours in the United States, who would not be slow to take advantage of them by completing the communications between themselves and us; but in placing the project before the public, enquiry will naturally be made as to the *direct* return that it promises on the large expenditure to be incurred. Your Sub-Committee, therefore, present the following figures exhibitory of the sources whence revenue is to be drawn.

In 1854 Chicago sent out in grain of all kinds

(including flour reduced to grain)..... 12,863,912 bushels

In 1862 her exports had increased to..... 56,477,104 "

Showing a steady progression of twenty *per cent. per annum.*

The other ports on the west coast of Lake Michigan have been increasing their commerce, in other words the whole country lying between it and the Mississippi has been growing, in equal ratio, and the total shipment of cereals last year from the two largest cities of the Lake, Chicago and Milwaukee, amounted to over 75,000,000 bushels.

Adopting half the above rate of progression, 10 per cent, for the next eight years (seeing that very large quantities are not to be counted on to increase in as rapid ratio as much lesser ones) the grain trade from these ports should in 1870, amount to upwards of 160,000,000 bushels.

It is worthy of note that, notwithstanding the mar. Railway outlets sea-ward from Lake Michigan, the Grain and Flour is nearly all forwarded by water. Of the 56,477,104 bushels sent from Chicago last year, 51,765,862 bushels took the lake route.

The foregoing statement shows the quantity of Agricultural products, in Grain alone, sent from the two principal Lake ports of the West last season. The following gives the quantity received *from* the West, by way of the Erie Canal, at the principal Atlantic seaport, New York, in the season of 1861. Your Sub-Committee regret that they have not been able to obtain a return of the Tonnage on the New York Canals for 1862.

Wheat (including Flour).....	38,561,165 bushels.
Corn,	22,844,179 "

Total Wheat and Corn reaching New

York by Canal,	55,905,844 "
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And the total tonnage of all Agricultural products from the Western States reaching tide-water by way of Erie Canal in same year amounted to.....

2,158,425 tons.

Yielding to the State a Revenue of \$2,682,969.

In estimating the revenue derivable from the Ottawa and Lake Huron navigation, the time within which not it alone, but also the connection with the Hudson, by way of Lake Champlain, can be completed, should be taken into account, and your Sub-Committee believe that all the anticipated results can be brought about within the compass of eight years; by which time, as calculated above, the grain trade of Chicago and Milwaukee alone, will have reached the annual amount of 160,000,000 of bushels, our interest in which will not be confined only to what we can ship in Ocean vessels at Montreal and Quebec, but our canal forwarders will also be busily occupied in carrying for Boston and New York. To assume then, that in 1870, we can send out 50,000,000 bushels by the Gulf of St. Lawrence and forward 30,000,000 bushels more, (about half what New York alone now takes wheat and Indian corn,) southward, to Lake Champlain, would not seem to be an extravagant estimate in view of the irrepressible expansion of western commerce.

The toll on a bushel of wheat passing through the Erie Canal in 1861, amounted to a little over 5 cents: at half which rate our revenue from western grown grain only, predicated on the quantities estimated above, would be

On 50,000,000 bushels, going out by the Gulf, $2\frac{1}{2}$ cts... \$1,250,000

On 30,000,000 bushels, sent south, at $2\frac{1}{2}$ cts..... 750,000

Total revenue from Western grain \$2,000,000.

Showing that with the entire system of navigation in operation, and the quantity of breadstuffs to be carried proving to be not over-estimated, we could well afford to reduce the toll below the not unreasonable figure of $2\frac{1}{2}$ cents per bushel, for to the agricultural products in grain, would have to be added our share of the large and growing trade in salted provisions, and the local demand for both articles, created by the springing up of manufactories along the route, and by the gradual settlement of the country; while up-freights, small at first but steadily increasing year by year, would add

their quota to a Revenue sufficient—irrespective of them,—after deducting all expenses incident to collection and to the proper maintenance of the navigation,—to pay at least 5 per cent *per annum* on an outlay of twenty millions of dollars, even supposing the communication to be opened from Lake Huron to Montreal only.

The State of New York has expended on the completion and enlargement of her system of canals since 1847 the sum of \$24,712,258. The whole cost of the works from first to last has been much above \$30,000,000, and the Net Revenue therefrom last year after paying for Repairs, Maintenance, Superintendence, &c., &c., amounted to \$4,081,591.

With such a result to embolden her Canada need scarcely fear to follow in the footsteps of her wealthy and prosperous neighbour.

Your Sub-Committee believe that full, fair, and open discussion, in all their bearings, of all the projects mooted for the attainment of the one great end—that of directing the trade of the west to the Gulf of St. Lawrence as its natural outlet to the sea—cannot fail (the feasibility of the scheme being admitted,) to convince the people of Canada that that route which lies wholly within Canadian territory, and through Canadian waters, is not to be pronounced upon from local or sectional points of view; but should be treated as—which it truly is—a great *national* measure, worthy of a growing and progressive people; a measure on which the whole province should cordially unite and the mother country look with favor and encouragement. No other scheme presents itself by which our merchants and carriers can be placed on a footing of at least equality, with those of the Atlantic and lake cities of the United States, or that will ensure to Canada for all time, such friendly, enduring, and profitable commercial relations, with the growing empire fronting on Lake Michigan. Nor would the project seem to be limited to the one large result of opening the safest and most direct communication between tide-water and the greatest food-producing country in the world; it would at the same time bring that favored country within easy navigable reach of perhaps the most inexhaustible concentration of manufacturing power in the world; as though nature, “that doeth all things well,” had designedly provided our grand interior chain of waters with weirs and dams of her own building, as a necessary adjunct to the grain-growing prairies beyond. Millions of dollars worth of property entering the French River in the form of grain, but arrested in its downward progress by mills at twenty different points on the 400 miles of navigation, will reach Montreal in the form of flour,—the cheapest ground, the cheapest barrelled, and the cheapest carried flour in America.

Viewing the subject from the stand-point of our relations with the old world, we find that from Quebec to Liverpool is 400 miles less distance than from New York to Liverpool. From Chicago to Liverpool by

way of the Ottawa and the Gulf is 740 miles less, than by way of Lake Erie and the Hudson; thus bringing Great Britain so much nearer to the granaries whence she draws her chief supplies of breadstuffs. The manufacturing opportunities already referred to would in time provide employment for thousands of her operatives and mechanics, and the lands homes for her surplus agricultural population. Finally,—in creating this new highway from the west we would also be opening the way to that vast western British territory, stretching from Lake Superior to the Pacific, and the problem of annexing parts of which to Canada, the Ottawa navigation project would go far to solve. Fort William on British waters at the head of Lake Superior, is equi-distant from Montreal, with Chicago, at the foot of Lake Michigan:—each about 980 miles by way of the Ottawa.—At the former point we attain the foot of another chain of waters, leading to the settlement of Red River, at the foot of Lake Winnipeg, into which at its western extremity, 900 miles beyond Red River, the Great Saskatchewan, after a nearly due east course of fully 1000 miles, through boundless plains and prairies, pours her fertilising waters. A continuous navigation from tide-water in the Gulf of St. Lawrence, to the foot of the Rocky Mountains, is not an impossibility in the future of British America.

Nor need New York or the Eastern States view the project under discussion with jealousy or disfavor. Its completion would force into existence the long talked of connection with Lake Champlain, simultaneously with the construction of which New York would enlarge her Champlain Canal to proportions corresponding to it, and to the Ottawa (proportions to which her Erie Canal can never attain), thereby reducing the navigable water distance between the mouth of the Hudson River and Lake Michigan, 150 miles below what it now is, or ever can be, by any other route. The good will of Boston, too, should be secured to our enterprise by the fact, that through it the breadstuffs of the west, of which she is so large a buyer, can be laid down in Lake Champlain at less cost, more speedily, and in better condition, than they can by any other way be brought to touch the borders of New England.

In concluding this Report, your Sub-Committee would touch briefly on one other subject; one so closely interwoven with improved navigation to the west, as to be certain to elicit enquiry from the delegates; we allude to the shipping facilities attainable in the St. Lawrence. On that point we will at once admit, that neither here nor at Quebec are the harbours, in their existing condition, fully adapted to the accommodation of the trade we are hoping to attract; but we can at the same time truthfully assert.

and as we believe show, to the satisfaction of our expected visitors, that both ports are capable of being made, as well in point of convenience as space, all that can be required. And as regards our own city of Montreal, your Sub-Committee would fain hope that the brilliant future disclosed to our vision by the great project which has formed the subject of their investigation may be the means of uniting all sections of our citizens on some broad and comprehensive scheme of harbour improvement, worthy of a great commercial city.

Respectfully submitted,

H. L. ROUTH,
Chairman.

MONTREAL, April, 1863.

APPENDIX A.

The advantage of the Ottawa Route to the trade of the Western States may be seen by a reference to the comparative cost of transporting a bushel of Wheat from Chicago to Liverpool, via Buffalo and New York, as contrasted with cost of same via Ottawa and Montreal, as given below.

Cost of transporting a bushel of Wheat from Chicago to Liverpool, via Buffalo and New York, in 1862.

	cts.
Average cost of lake freight to Buffalo during season,	10½
" " from Buffalo to New York, say	15½
Insurance to New York from Chicago	2½
Lighterage, Weighing, Screening, Brokerage, Stamp duty, &c., say	1
Commission at New York for engaging freight, &c., &c., say	1
Average Ocean freight from New York to Liverpool, from 1st May to 1st Dec., 1862	23
Primage 5 per cent. on freight, say	1
Insurance to Liverpool from New York	2½
War risk, say	2½
Imperial duties at Liverpool	3
Town and Dock dues, Weighing, &c., at Liverpool,	3
Commissions at Liverpool	5
Total cost to Liverpool, from Chicago via Buffalo and New York	71

COST of transporting a bushel of Wheat from Chicago to Liverpool, via Ottawa and Montreal.

	cts.
From Chicago to Montreal as per offer of parties now in carrying Trade including 2 cents toll	13
Insurance to Montreal	1½
Commission at Montreal for engaging Ocean freights, &c., &c.	1
Ocean freight same as average from Port of Montreal during season 1862	24½
Insurance from Montreal to Liverpool	2½
Town and Dock dues, Weighing, &c., at Liverpool	3
Imperial duties at Liverpool	3
Commissions, &c., at Liverpool	5

Total cost to Liverpool from Chicago via Ottawa and Montreal

Difference in favor of Montreal and Ottawa Route

53½

17½

TABLE shewing costs per bushel for freighting grain from Chicago to Montreal by Welland Canal and Kingston Route, years 1858 to 1862, with proportionate rates by Ottawa Route.

Seasons 1858, 1859,

(with about $\frac{1}{2}$ cent tolls.)	Lake.	River.	Total.
Welland Canal Route, maximum,.....	11 $\frac{1}{2}$	6 =	17 $\frac{1}{2}$
Ottawa Route, proportionate rates,	6 $\frac{1}{2}$	6 = 12 $\frac{1}{2}$	
Less saving in Insurance,		1	11 $\frac{1}{2}$
Difference in favor of Ottawa Route,			6
Welland Canal Route, minimum,	6	3 =	9
Ottawa Route, proportionate rates,	3	3 = 6	
Less saving in Insurance,		1	5
Difference in favor of Ottawa Route,			4
Welland Canal Route, average,	7 $\frac{1}{2}$	3 $\frac{1}{2}$ =	10 $\frac{1}{2}$
Ottawa Route, proportionate rates,	4 $\frac{1}{2}$	3 $\frac{1}{2}$ = 7 $\frac{1}{2}$	
Less saving in Insurance,		1	6 $\frac{1}{2}$
Difference in favor of Ottawa Route,			4 $\frac{1}{2}$

Seasons 1860 to 1862,

(nearly free of tolls.)			
Welland Canal Route, maximum,.....	21	7 =	28
Ottawa Route, proportionate rate,	11	7 = 18	
Less saving in Insurance,		1	17
Difference in favor of Ottawa Route,			11
Welland Canal Route, minimum,	7 $\frac{1}{2}$	4 =	11 $\frac{1}{2}$
Ottawa Route, proportionate rate,	4 $\frac{1}{2}$	4 = 8 $\frac{1}{2}$	
Less saving in Insurance,		1	7 $\frac{1}{2}$
Difference in favor of Ottawa Route,			3 $\frac{1}{2}$
Welland Canal Route, average,	12 $\frac{1}{2}$	4 $\frac{1}{2}$ =	17 $\frac{1}{2}$
Ottawa Route, proportionate rate,	9 $\frac{1}{2}$	4 $\frac{1}{2}$ = 11 $\frac{1}{2}$	
Less saving in Insurance,		1	10 $\frac{1}{2}$
Difference in favor of Ottawa Route,			6 $\frac{1}{2}$

MEMO.—The lockage in proposed Ottawa Canals would not be greater—and might be less—than on the existing St. Lawrence Canals. The greater extent of free water on the Ottawa route would enable craft to make a round trip in nearly the same time now occupied on the present route.

MEMORANDUM shewing the average freight-cost of transporting a bushel of Wheat from Chicago to Liverpool, by way of Buffalo and New York, during years 1860, 1861 and 1862.

Years.	Chicago to Buffalo.	Buffalo to New York.	New York to Liverpool.	TOTAL.
1860....	9½ cents.	14½ cents.	20½ cents.	44½ cents.
1861....	12 "	15½ "	19 "	46½ "
1862....	10½ "	15½ "	23 "	49½ "

Memorandum shewing the same, from Chicago to Liverpool, by way of Welland Canal, Kingston, and Montreal.

Years.	Chicago to Kingston.	Kingston to Montreal.	Montreal to Liverpool, from 1st May to 1st Dec.	TOTAL.
1860....	11½ cents.	3½ cents.	24½ cents.	40½ cts.
1861....	13½ "	5½ "	23 "	42½ "
1862....	12½ "	5½ "	24½ "	42½ "

H. L. ROUTH, Esq.,
&c., &c.

DEAR SIR,

With respect to the question asked by the Sub-Committee as to whether a ship canal of eleven feet depth would cheapen the freight cost of produce over one of say eight feet depth of water, in reply the following is submitted :

A ship canal from Lake Huron to Montreal will not cheapen the cost of freighting a bushel of grain over one with eight feet water when barges are used for river navigation instead of schooners.

With a canal of eight feet depth of water and locks of 250 feet long, barges can be constructed to receive the cargo of a lake vessel of say 1000 tons, or 35,000 bushels grain.

The cost of a lake schooner to carry 20,000 bushels grain would be \$18,000 ; a barge to carry an equal quantity would cost say \$6,000, or about one-third, while the cost of running a barge would be less than one-half of that of a schooner ; in either case steam-tugs would have to be used.

Montreal, April, 1863.

A. C.

APPENDIX B.

MARINE INSURANCE AGENCY,
Montreal, March 2, 1863.

SIR,—In answer to your enquiries about rates of Insurance on Grain by the routes now in use, and the proposed Canal via French River, I annex a comparative Table from opening of navigation to the first of December.

	April	May	September.		October.		November.	
	To 31 Aug.	1 to 14.	1 to 14.	14 to 30.	1 to 14.	14 to 31.	1 to 14.	14 to 30.
Milwaukee to Montreal, on grain via Canal and Lakes,	3.13	2.38	2.65	3.13	3.60	4.07	5.03	5.98
Milwaukee to Montreal, on grain via Collingwood route,	2.65	1.94	2.18	2.65	2.89	3.36	4.07	5.03
Milwaukee to Montreal, on grain via French River and Canal,	1.91	1.33	1.56	1.91	2.15	2.63	3.34	4.29
Milwaukee to New York, via Goderich and Buffalo,	1.91	1.33	1.56	1.91	2.15	2.63	3.34	4.29
Milwaukee to New York, via Buffalo and Erie Canal,	2.15	1.44	1.68	2.15	2.39	2.86	3.57	4.53

Ocean rates of Insurance from St. Lawrence to British Ports from May to October are the same as from Atlantic Ports of the United States, and rise each fortnight in October about one per cent.

Yours truly, THEODORE HART,
Agent of Sun, Mercantile, and
Commercial Co's of N.Y.

H. L. ROUTH, Esq.

APPENDIX C.

MONTREAL, 26th March, 1868.

"OTTAWA AND FRENCH RIVER NAVIGATION PROJECT."

SIR,

In compliance with the request of the Sub-Committee of the Board of Trade, I have made an estimate of the difference in cost between the scale of navigation contemplated by my Report of 22nd March, 1858, and one adapted to barges carrying from 18,000 to 20,000 bushels of grain: the draught of such class of vessel being assumed at 8 feet. Not having immediate access to the original maps and plans showing the result of the surveys of the route, my reduced estimate can only be taken as an approximation to what the actual difference in cost would be: That difference may, however, very safely be put down at not less than eight millions of dollars, while if the locks were to be diminished to the size just sufficient for the passage of one such barge at a time, say 160 feet x 83 feet x 8 feet depth, the reduction in cost would reach to ten millions dollars.

My original estimate was for a propeller navigation locks 250 x 50 feet: Depth of water 10 feet,—and, as the report shows, was based on very liberal prices for all classes of work, with a view to covering every unforeseen contingency that might possibly arise in carrying out an undertaking of such vast magnitude. It amounted in gross to \$24,000,000.

Deducting the lowest above estimated difference 8,000,000.

We have.....\$16,000,000.

as the probable cost of a large barge navigation such as contemplated in the question submitted to me by the Sub-Committee, but still having locks of the dimensions originally designed, so that when the larger project shall have become a commercial necessity it can be attained without the sacrifice of any costly works.

Adopting the lesser size of lock would reduce the whole outlay to \$14,000,000.

Respectfully submitted,

(Signed,) W. SHANLY.

H. L. ROUTH, Esq.

APPENDIX D.

Importation and Manufacture of Lumber at Chicago and Milwaukee during the year 1862 :—

CHICAGO.

Lumber, imported,.....	305,674,045 feet.
Shingles, imported (No.)	131,355,000
Do. made,	50,000,000
Laths, imported, "	23,880,000
Do. made, "	10,000,000

MILWAUKEE.

Lumber, imported,.....	38,858,000 feet.
Shingles, " (No.)	13,385,000
Laths, "	3,950,000 feet.

Average prices of Lumber in Chicago and Milwaukee during year 1862 :—

	CHICAGO.	MILWAUKEE.
First or Clear Boards per M,	\$25.00	\$26.00
Flooring, "	13.50	14.00
Shingles, "	2.50	2.50
Lath, "	2.00	2.00

Average prices of Transportation of dry Lumber to Chicago by boats :—

From Gatineau or Bay of Quinte <i>via</i> Welland Canal, per M, say....	\$4.00
From points on proposed Ottawa Canal,.....	2.50

Quebec Lumber Statistics :—

Average Receipts for 5 years of all kinds of Lumber into Port of Quebec, 401,968,786
 Average price of Clear Boards in Quebec during 1862,

say £14 per standard = \$20.36 per M.

Cost of Transportation of Deals from Gatineau or Bay of Quinte

to Quebec, floated, per 100 stds. \$4.50 to \$6.00.

Do. do. from points on proposed Ottawa Canal

to Quebec, floated, per 100 stds. \$4.50 to \$6.00.

Statement of Receipts and Shipments of Produce at Chicago and Milwaukee in 1862 :—

CHICAGO.	Receipts.	Shipments.
Flour, reduced to bushels,.....	9,636,855	9,140,820
Wheat, bushels,.....	13,978,116	13,802,838
Corn, "	29,574,328	29,452,610
Oats, "	4,688,722	3,112,366
Rye, "	1,038,825	871,796
Barley, "	872,053	532,195
Totals,.....	59,788,899	56,918,685

MILWAUKEE.		Receipts.	Shipments.
Flour, reduced to bushels,.....	2,648,000		3,557,025
Wheat, bushels,.....	15,613,995		14,915,680
Corn, "	258,954		9,489
Oats, "	282,765		79,094
Rye, "	154,576		126,301
Barley, "	149,997		44,900
Totals,.....	19,108,287		18,732,489

Shipments of Beef, Pork, &c., from Chicago and Milwaukee during year 1862.

	CHICAGO.	MILWAUKEE.
Pork, bbls.,.....	193,920	56,434
Beef, "	151,631	36,391
Lard, pounds,.....	54,505,123	5,177,593
Cut meats, pounds,.....	71,944,010	5,382,625
Tallow, "	8,095,531	1,106,750

Statistics of Salt Trade at Chicago and Milwaukee during year 1862:—

	CHICAGO.	MILWAUKEE.
Receipts,	612,003 bbls.	137,167 bbls.
	278,789 sacks.	5,019 sacks.
	13,047 tons.	240 tons.
Average prices,.....	Coarse, \$2.30	\$2.20
	Fine, 1.92,	2.10

Receipts of Coal at Chicago and Milwaukee during year 1862:—

Chicago,.....	218,423 tons.
Milwaukee,.....	24,860 "
Average price, by cargo, of Bituminous Coal,	\$5.70
" " hard English "	7.00

Shipments of various articles from Chicago and Milwaukee during year 1862.

Hides	15,315,359 lbs.	2,403,150 lbs.
Lead,.....	6,516,796 "	
Wool,.....	2,101,544 "	1,314,210
Seeds,.....	6,190,215 "	66,900
Hogs,.....	491,135	
Cattle,.....	112,745	

APPENDIX E.

To His Excellency, the Governor General of Canada.

The Legislature of the State of Illinois, on the 14th day of February, 1863, passed a joint resolution, which was on the same day duly approved by the Governor, creating a Commission to be composed of five citizens of Illinois, to be appointed by the Governor, with full power and authority on behalf of the State, to petition or to proceed personally to the Provincial Government and Parliament of Canada, and if deemed by the Commissioners advisable, to the Government of Great Britain, for the purpose of presenting to those Governments, in any proper manner, statistics of the trade and production of the North-western States of the American Union, which are seeking enlarged and cheaper outlets to the tide-water, by way of the Lakes and Rivers and new or enlarged Canals of Canada, and to solicit from those Governments, their earnest consideration of and early action upon a subject of such great and rapidly growing importance to them as well as to the North-western States.

In compliance with the requirements of the joint resolution referred to, and under the appointment of the Governor of Illinois, we have come respectfully and briefly to present to you, and through you to the Provincial Parliament and the British Government, the importance both to Great Britain and the United States of so opening and perfecting the navigation of the St. Lawrence, as to afford to the commerce of both countries a cheap communication between the shipping ports on the North-western Lakes and Great Britain. The growing and already vital necessity for enlarged and cheaper avenues between the North-western States and the Atlantic has been comparatively neglected, because those great food-producing States were sparsely populated, with only a few scattered hamlets and forts, at the date of the last treaty between the two Countries. But within the last half century the agricultural resources of these States have been developed with a rapidity unparalleled in the history of the world. The surplus of products furnished by these States, with their present population of nine millions, is already immense, and with the increased facilities for reaching a market, that surplus will be increased with a rapidity even

beyond that of the past twenty-five years. With one-tenth of the arable surface under cultivation, the product of wheat of the North-western States in 1862 is estimated at one hundred and fifty million bushels, and of Indian corn at five hundred million bushels; and from our own State of Illinois alone there has been shipped annually, for the last two years a surplus of food sufficient to feed ten millions of people.

For several years past, a lamentable waste of crops actually harvested has occurred in consequence of the inability of the railways and canals leading to the seaboard to take off the excess. The North-west seems already to have arrived at a point of production beyond any possible capacity for transportation which can be provided, except by the great natural outlets. It has for two successive years crowded the canals and railways with more than one hundred million of bushels of grain, besides immense quantities of other provisions, and vast numbers of cattle and hogs. This increasing volume of business cannot be maintained without recourse to the natural outlet of the Lakes.

The future prosperity of these States' bordering on the great Lakes, depends, in a great measure, upon cheap transportation to foreign markets; hence, they are vitally interested in the question of opening the St. Lawrence, the great natural thoroughfare from the Lakes to the Ocean, through and by which the people of England may enlarge their supplies of breadstuffs and provisions, greatly exceeding the quantity heretofore received from the United States, at one-fourth less cost than it has heretofore been obtained. From actual experience derived from shipments of Indian corn from Chicago to Liverpool, it is shown that the freight charges often cover seven-eighths of the value of a bushel of corn at Liverpool. More than one-half of the cost of wheat is also often consumed by the present very inadequate means of transportation.

The annually increasing receipts of foreign grain into the United Kingdom, are chiefly made up of increased receipts from the United States. The freight charges upon our American breadstuffs amount, in the aggregate, to more than double the average charges on all the grain imported there from the Continental markets, yet increased supplies are annually being drawn from America. The European customer for our breadstuffs determines their price in all of our markets. The surplus of grain derived from the North-west is 50 or 60,000,000 of bushels beyond the demand of the Eastern States; and when that surplus is carried to their markets, the foreign quotations establish the value of the entire harvest.

Our prairie soils are tilled with the same facility as the alluvial soils of the valley of the Nile. In their natural state they have an abundant growth of the most nutritious grasses, which furnish the farmer with food for his cattle and horses at a nominal cost. The cultivation of these lands so largely by improved mechanical means, reduces the first cost of our

grain below that of any of the European countries ; hence our products have entered largely into competition with the products of other countries, upon which the freight charges form a small part of the cost to the English importer. These North-western States furnished one-third of 16,094,914 quarters of grain imported into England in the year 1861, a season of extremely high freights on the Lakes and Canals as well as upon the Ocean. The official returns of 1862 are not yet published. It is believed, however, that the proportion of American grain was still larger than in 1861. In this view we may safely conclude that the question of devising cheaper and more expeditious routes for the transportation of this grain to England, has become of equal importance to Great Britain and the United States.

It is the opinion of your memorialists that the cost of transportation may be reduced ten shillings per quarter, or thirty cents per bushel. One-half of this sum added to the income of our farmers would give a remarkable stimulus to the production of grain, and would lead in a few years, within five years at the farthest, to the production of a surplus exceeding the total of the present importation of grain into England from all countries. And it is equally true that the present heavy freight charges, consequent upon the inadequacy of the means of transportation, will diminish the production of grain and divert agricultural labor and enterprise into some other and more remunerative channel. We think we are warranted in expressing the opinion that a moderate expenditure devoted to connecting the Canadian Rivers with the great Lakes in Canada, so as to permit steam navigation to Montreal, and if practicable, a direct trade with Liverpool, will open to England a supply of breadstuffs as large as she now imports from every other country, at lower rates of first cost, and thus give the control of the grain markets of the world to the largest purchaser.

The interior of North America is drained by the St. Lawrence, which furnishes for the country bordering upon the Lakes a natural highway to the Sea. Through its deep channel must pass the agricultural productions of the vast Lake region. The commercial spirit of the age forbids that international jealousy should interfere with great natural thoroughfares, and the Governments of Great Britain and the United States will appreciate this spirit and cheerfully yield to its influence. The great avenue to the Atlantic through the St. Lawrence being once opened to its largest capability, the laws of trade, which it has never been the policy of the Federal Government to obstruct, will carry the commerce of the North-west through it.

In concluding, we will say that we come as the Agents of the Government of the State of Illinois, not intending to transcend the limits of our power, and carefully avoiding the assumption of any of the functions of the Federal Government in its international relations, but to present to

the Provincial Government of Canada, and through it, to the British Government, such facts concerning the vast resources of the North-western States, their capacity for production of the cereals, and the difficulty in reaching tide-water with their products, as will tend to the opening of direct trade between those States and Liverpool.

Respectfully submitted,

W. B. OGDEN.

JAS. W. SINGLETON.

J. YOUNG SCAMMON.

W. H. OSBORN.

W. H. GREEN.

CHICAGO, ILLINOIS, March 10, 1862.

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Shipments of Flour and Grain from Ports on Lake Michigan, during the year 1862.

PORTS.	Flour, barrels.	Wheat, bushels.	Corn, bushels.	Other grain, bushels.	Total, bushels.
Chicago, by Lake.....	1,057,803	13,466,325	29,248,677	3,661,845	51,665,862
Milwaukee ".....	711,405	14,915,680	9,489	251,295	18,733,489
Green Bay ".....	95,332	304,242	.....	.....	780,902
Racine, Kenosha, Sheboygan, and Port Wash- ington.....	48,593	903,764	67,082	60,029	1,273,840
Total by Lake.....	1,913,133	29,590,011	29,325,248	3,974,169	72,454,093*
" by Railroads.....	686,340	790,146	212,124	660,357	5,294,327
Grand Total.....	2,599,473	30,380,157	29,537,372	4,633,526	77,748,420

* Of this amount 1,317,026 bushels left the Lake at Grand Haven for the Detroit and Milwaukee Railroad.

Table, showing the quantity of Flour and Grain sent Eastward from the

RECEIVED AT	1856.				1857.		
	Flour, barrels.	Wheat, bushels.	Corn, bushels.	Other grain, bushels.	Flour, barrels.	Wheat, bushels.	Corn, bushels.
1. Western Terminus Baltimore and Ohio Railroad.....	449,797	.....	.....	487,100	426,861	.....	.....
2. Western Terminus Pennsylvania Central.....	215,000	.....	.....	405,872	351,011	.....	.....
3. Dunkirk.....	350,000	.....	.....	.....	235,331	9,266	99,9
4. Buffalo.....	1,211,189	8,465,671	9,632,477	2,025,519	925,411	8,383,815	5,720,4
5. Suspension Bridge.....	304,524	.....	.....	900,000	180,194	148,138	.....
6. Oswego.....	202,930	8,382,398	3,589,211	619,280	101,363	5,363,025	2,003,9
7. Ogdensburg.....	354,964	610,937	377,975	37,432	361,578	598,523	517,0
8. Cape Vincent.....	65,000	500,000	45,000	50,000	60,472	477,375	40,5
9. Rochester.....	.....	.....	.....	.....	.....	.....	.....
10. Montreal.....	712,038	1,546,352	637,969	67,366	637,052	1,708,965	383,1
Total.....	3,865,442	19,505,358	14,282,632	4,592,569	3,279,213	16,679,108	8,765,0
Bringing flour to bushels of wheat, we have a total of Bushels of Grain.....	{ Total movement.....57,707,769 bushels. { Received at Montreal.... 5,811,877 or 10 per cent.				Total movement.....44,111,299 Received at Montreal.... 5,315,552		

	1860.				1861.				1862.		
	Flour, Barrels.	Wheat, bushels.	Corn, bushels.	Other grain, bushels.	Flour, barrels.	Wheat, bushels.	Corn, bushels.	Other grain, bushels.	Flour, arrels.	Wheat, bushels.	Corn, bushels.
1.	352,413	.....	.....	126,393	270,000	.....	.....	80,000	690,000	.....	.....
2.	426,660	.....	.....	864,160	1,045,028	.....	.....	1,948,256	890,696	.....	.....
3.	543,765	500,888	644,081	8,843	736,529	604,561	230,400	7,175	1,095,365	112,061	149,6
4.	1,122,335	18,502,649	11,386,217	1,632,920	2,159,591	27,105,219	21,024,657	2,532,770	2,846,022	30,435,831	24,288,6
5.	650,000	.....	.....	1,875,000	758,915	.....	.....	2,675,948	875,000	.....	.....
6.	121,185	9,449,461	4,966,952	2,043,535	117,087	9,809,495	5,508,799	1,796,213	235,382	10,982,132	4,528,9
7.	248,200	565,022	867,014	35,161	411,488	677,386	1,119,594	25,668	580,464	693,684	1,175,1
8.	28,940	203,878	73,300	186,597	65,407	276,610	124,411	104,591	48,576	316,403	249,3
9.	5,250	425,765	.....	10,725	2,500	520,618	.....	10,990	1,000	150,000	.....
10.	608,309	2,686,728	138,214	915,648	1,095,339	7,738,084	1,565,477	1,795,509	1,174,602	8,534,172	2,661,6
	4,106,057	32,334,391	18,075,778	7,698,982	6,691,884	46,731,973	29,573,338	10,977,120	8,437,107	51,224,283	33,053,3
Total movement.....	78,639,436 bushels. Received at Montreal.. 6,782,135 or 8½ per cent.				Total movement .....120,741,851 bushels. Received at Montreal.. 16,575,765 or 13½ per cent.				Total movement..... 137,772,441 Received at Montreal.. 18,041,839		

Exports of Flour and Grain from the undermentioned ports during the year 1862.

PORTS.	Flour, barrels.	Wheat, bushels.	Corn, bushels.	Other grain, bushels.	Total bush. of grain.
Exports from New York.....	2,961,518	25,564,755	12,683,878	1,513,083	54,569,306
" " Philadelphia.....	464,290	1,967,673	1,129,270	778,525	6,196,918
" " Baltimore.....	361,158	515,281	1,026,681	27,138	3,374,890
" " Boston.....	498,185	45,544	222,605	.....	2,759,074*
" " Montreal, by St. Lawrence via Portland....	597,477	6,500,796	1,774,546	739,837	12,002,564
" " Quebec.....	62,955	97,956	8,524	10,207	431,462
Total from the above Ports.....	4,945,583	34,692,005	16,345,504	3,068,790	79,948,378

Of this 205,046 bushels were exports from Montreal via Boston.

Export Eastward from the Lake Regions, from 1856 to 1862 inclusive.

1857.			1858.				1859.			
Wheat, bushels.	Corn, bushels.	Other grain, bushels.	Flour, barrels.	Wheat, bushels.	Corn, bushels.	Other grain, bushels.	Flour, barrels.	Wheat, bushels.	Corn, bushels.	Other grain, bushels.
.....	.....	256,183	682,314	.....	.....	330,871	466,403	17,800	.....	196,466
.....	.....	206,793	450,000	.....	.....	250,000	350,000	.....	.....	150,000
9,266	99,914	14,088	331,007	186,449	94,945	24,565	432,052	263,483	77,014	14,400
8,383,815	5,720,413	1,321,406	1,614,520	10,735,909	6,621,668	2,789,678	1,502,198	9,559,908	3,151,387	1,993,140
148,138	.....	.....	200,410	102,694	.....	.....	41,374	57,562	.....	73,346
5,353,023	2,003,992	370,249	95,720	6,572,432	2,913,618	1,292,424	64,941	4,875,489	804,646	1,342,010
598,523	517,076	14,740	381,624	790,178	720,236	44,126	294,569	769,010	298,519	64,702
477,375	40,537	49,408	72,633	410,191	40,000	156,631	9,390	266,735	20,100	216,435
.....	.....	.....	7,110	276,515	.....	8,865	1,764	416,821	.....	8,900
1,708,965	383,162	38,165	664,275	1,769,482	105,087	136,537	597,583	638,900	71,430	204,652
16,679,108	8,765,094	2,271,032	4,499,613	20,843,850	10,495,554	5,035,097	3,760,274	16,865,708	4,423,096	4,264,051
Movement.....44,111,299 bushels.			Total movement.....58,872,566 bushels.				Total movement.....44,354,225 bushels.			
at Montreal.... 5,315,552 or 12 per cent.			Received at Montreal.... 5,332,481 or 9 per cent.				Received at Montreal.... 3,902,897 or 8½ per cent.			

1862.		
Wheat, bushels.	Corn, bushels.	Other grain, bushels.
.....	.....	550,000
.....	.....	1,622,893
112,061	149,654	10,173
30,435,831	24,288,627	3,849,620
.....	.....	2,750,000
10,982,132	4,528,962	1,467,823
693,684	1,175,176	30,000
316,403	249,369	49,047
150,000	.....	6,622
8,534,172	2,661,611	973,046
51,224,283	33,053,399	11,309,224

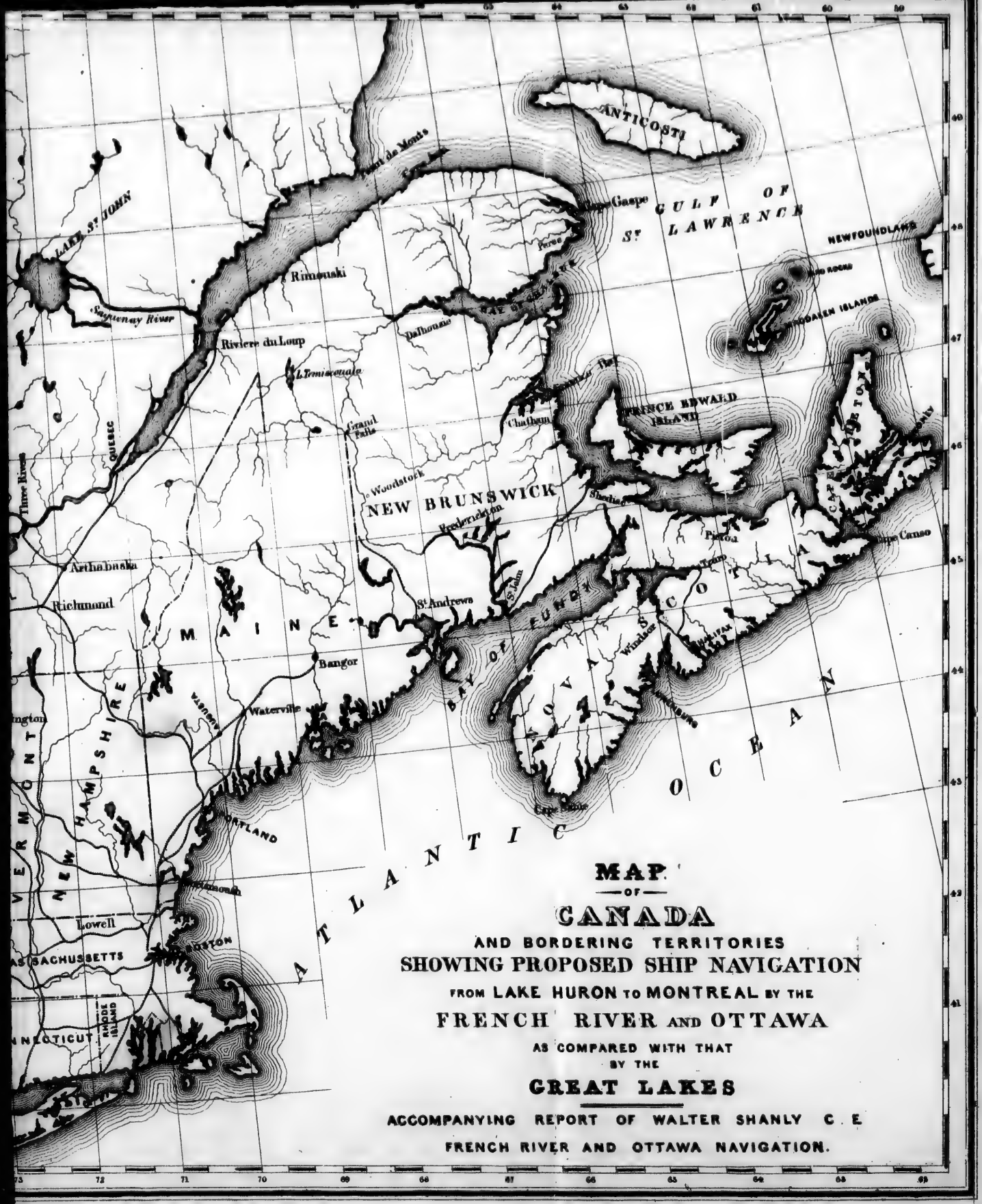
Movement..... 137,772,441 bushels.
at Montreal.. 18,041,839 or 13½ per cent.

Imports of Flour and Grain into Great Britain in 1862.

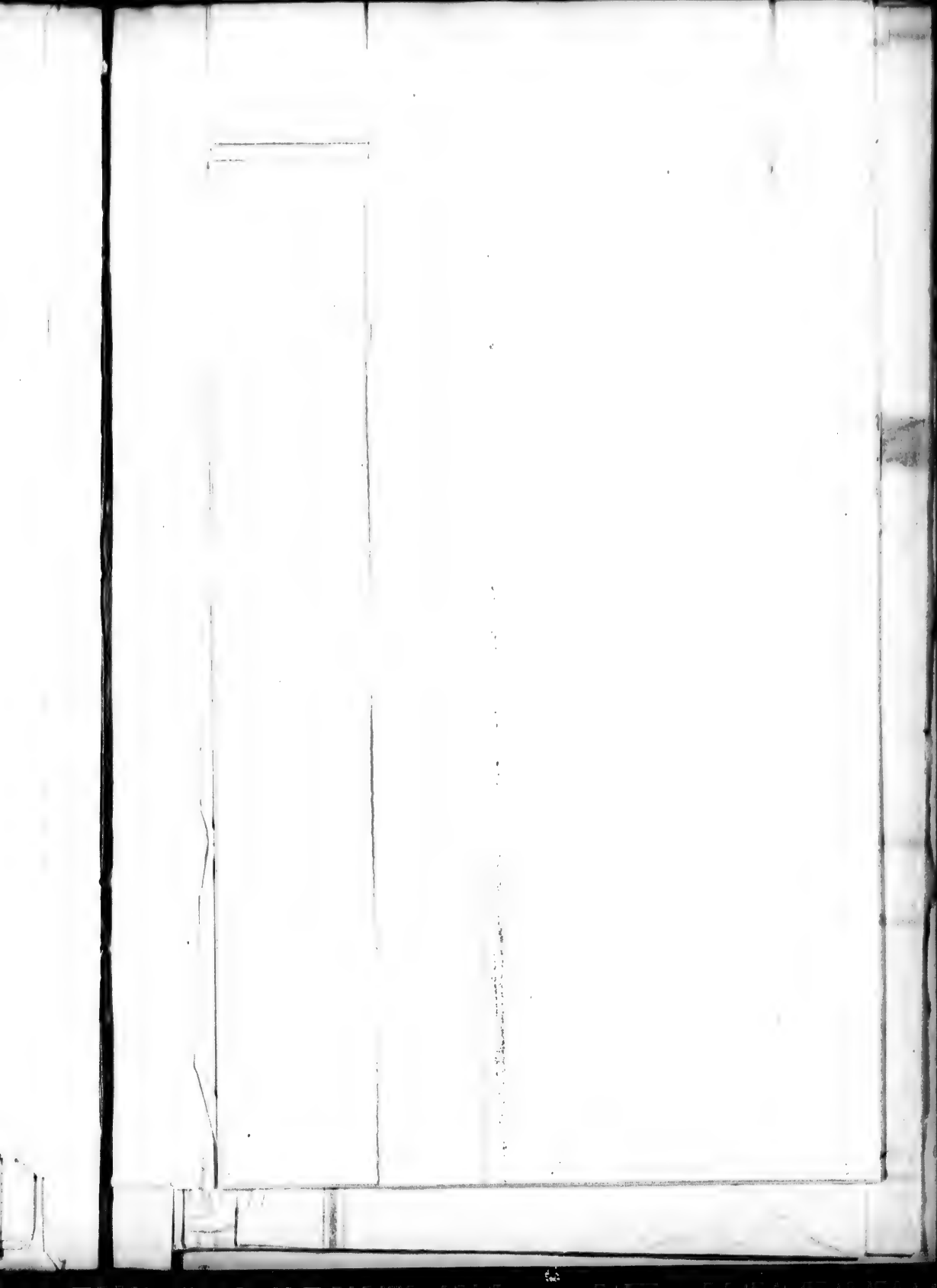
IMPORTS FROM	Flour, Cwts.	Wheat, bushels.	Indian Corn, bushels.	Other Grain, bushels.	Total bushels of grain.
Russia.....		10,617,264	Countries	Countries	Meal and flour reduced to bushels of grain. 147,400,352 value for £36,788,000 Sig.
Prussia.....	.....	11,603,872	whence.	whence	
Denmark.....	.....	1,162,704	imported	imported	
Mecklenburg.....	.....	745,288	not given in	not given in	
Hanse Towns.....	256,973	1,253,608	the available	the available	
France.....	790,540	1,798,680	returns.	returns.	
Turkey, Moldavia, and Wallachia	.....	3,120,544			
Egypt.....	.....	6,072,288			
United States.....	4,499,534	29,798,160			
British North America.....	1,108,591	6,691,616			
Other countries.....	551,975	2,690,136			
Total.....	7,207,113	75,754,160	21,830,328	33,342,464	



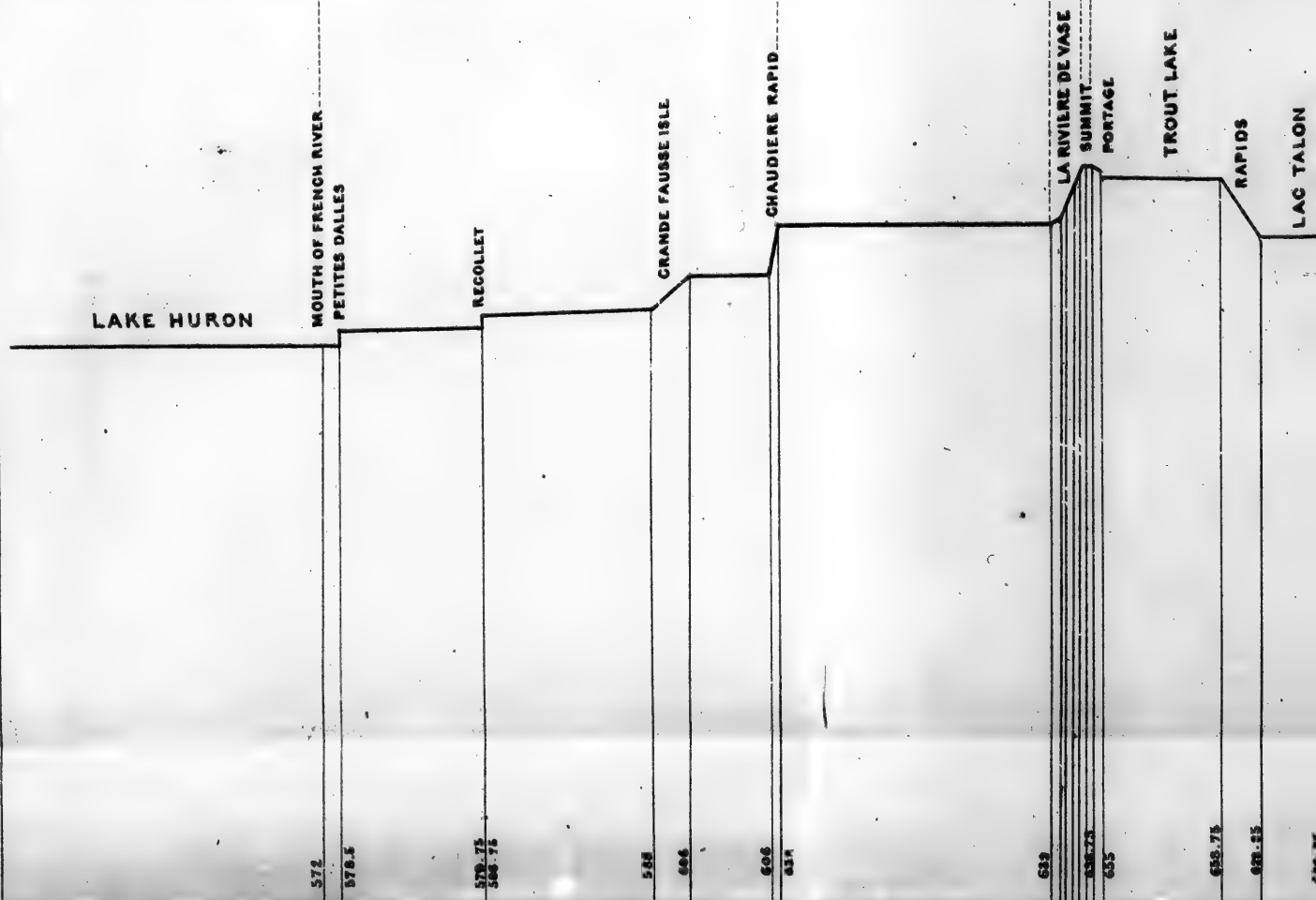




MAP
—OF—
CANADA
AND BORDERING TERRITORIES
SHOWING PROPOSED SHIP NAVIGATION
FROM LAKE HURON TO MONTREAL BY THE
FRENCH RIVER AND OTTAWA
AS COMPARED WITH THAT
BY THE
GREAT LAKES
ACCOMPANYING REPORT OF WALTER SHANLY C. E.
FRENCH RIVER AND OTTAWA NAVIGATION.



GEORGIAN BAY FRENCH RIVER LAKE NIPPISING RIVER MAT

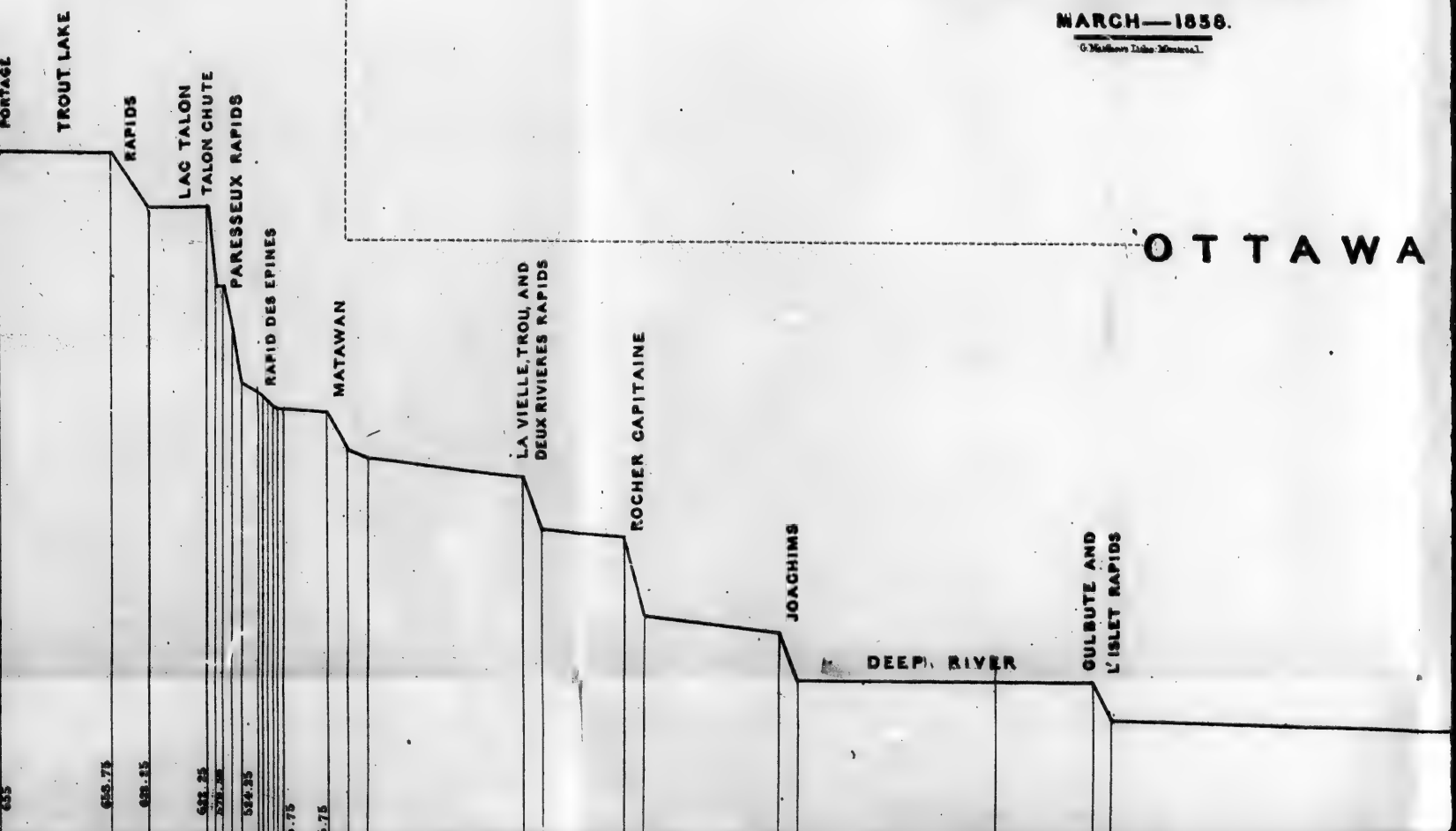


SECTION OF WATER
 FROM
 GEORGIAN BAY TO MONTREAL
 ACCOMPANYING THE
 REPORT OF WALTER SHANLY, C.
 ON THE
 OTTAWA AND FRENCH RIVER
 NAVIGATION PROJECT

MARCH—1858.

G. Mathers Litho. Montreal.

RIVER MATAWAN



SECTION OF WATERS
FROM
GEORGIAN BAY TO MONTREAL
ACCOMPANYING THE
REPORT OF WALTER SHANLY, C.E.
ON THE
OTTAWA AND FRENCH RIVER
NAVIGATION PROJECT
MARCH—1858.
G. Matthews Litho. Montreal.

OTTAWA RIVER

DEEP RIVER

GULBUTE AND
L'ISLET RAPIDS

CALLUMET

ENTRANCE DU FORT

DES CHATS

TS RAPIDS

HEMES

IDS



578

578.5

579.75
586.76

585

586

586

587

589

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589.75

440 428 X

412 X

584 X 580 X

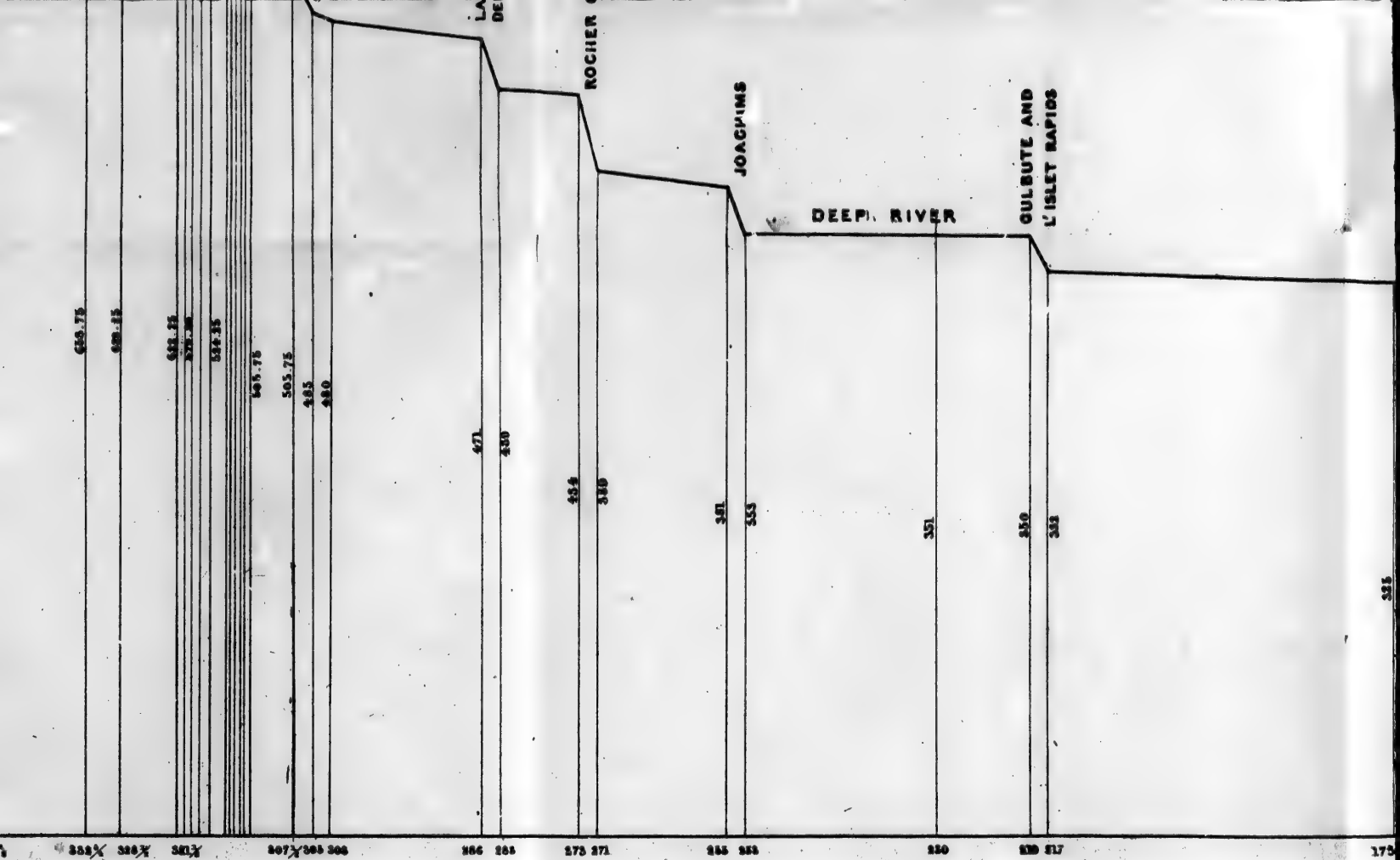
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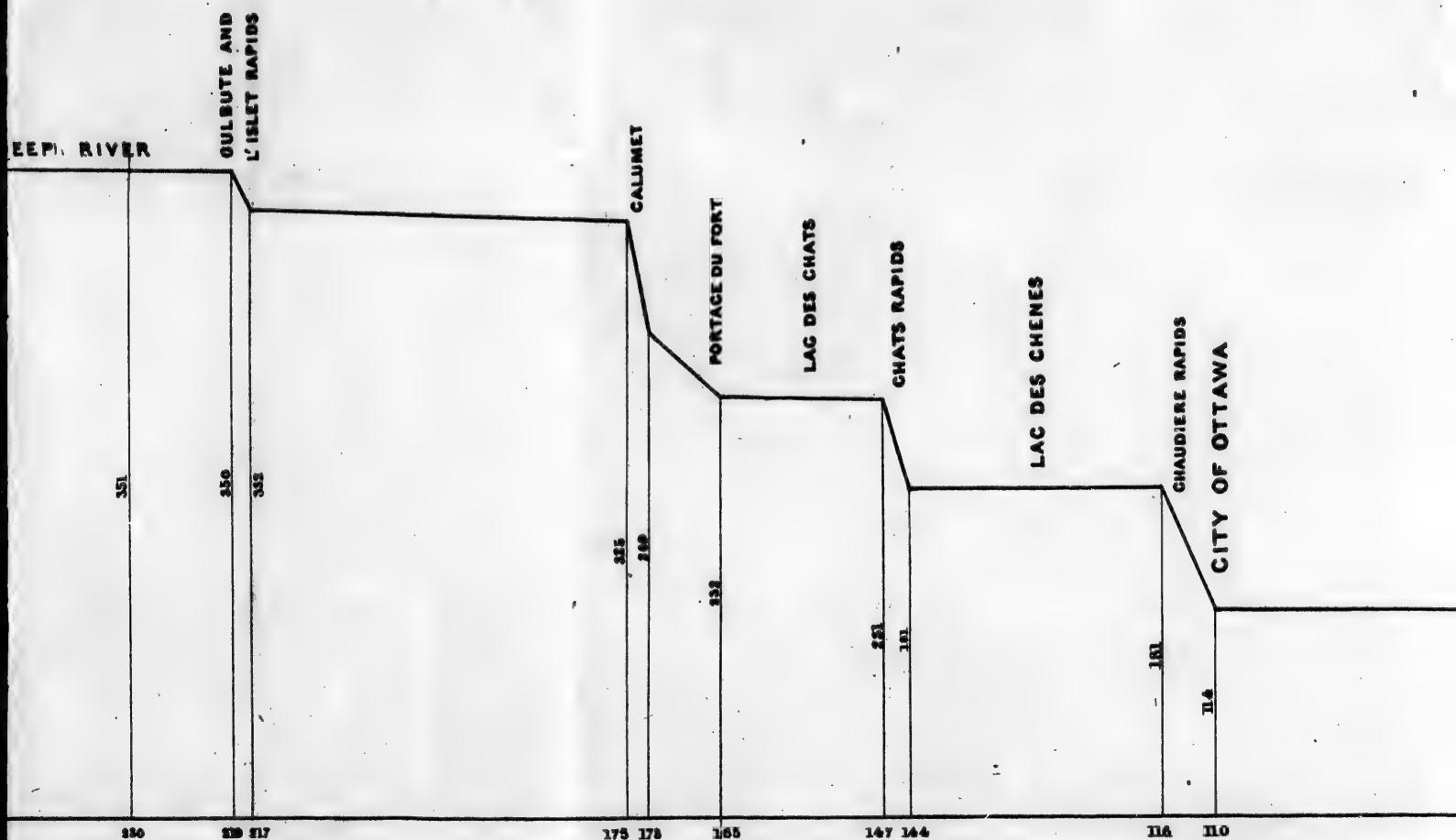
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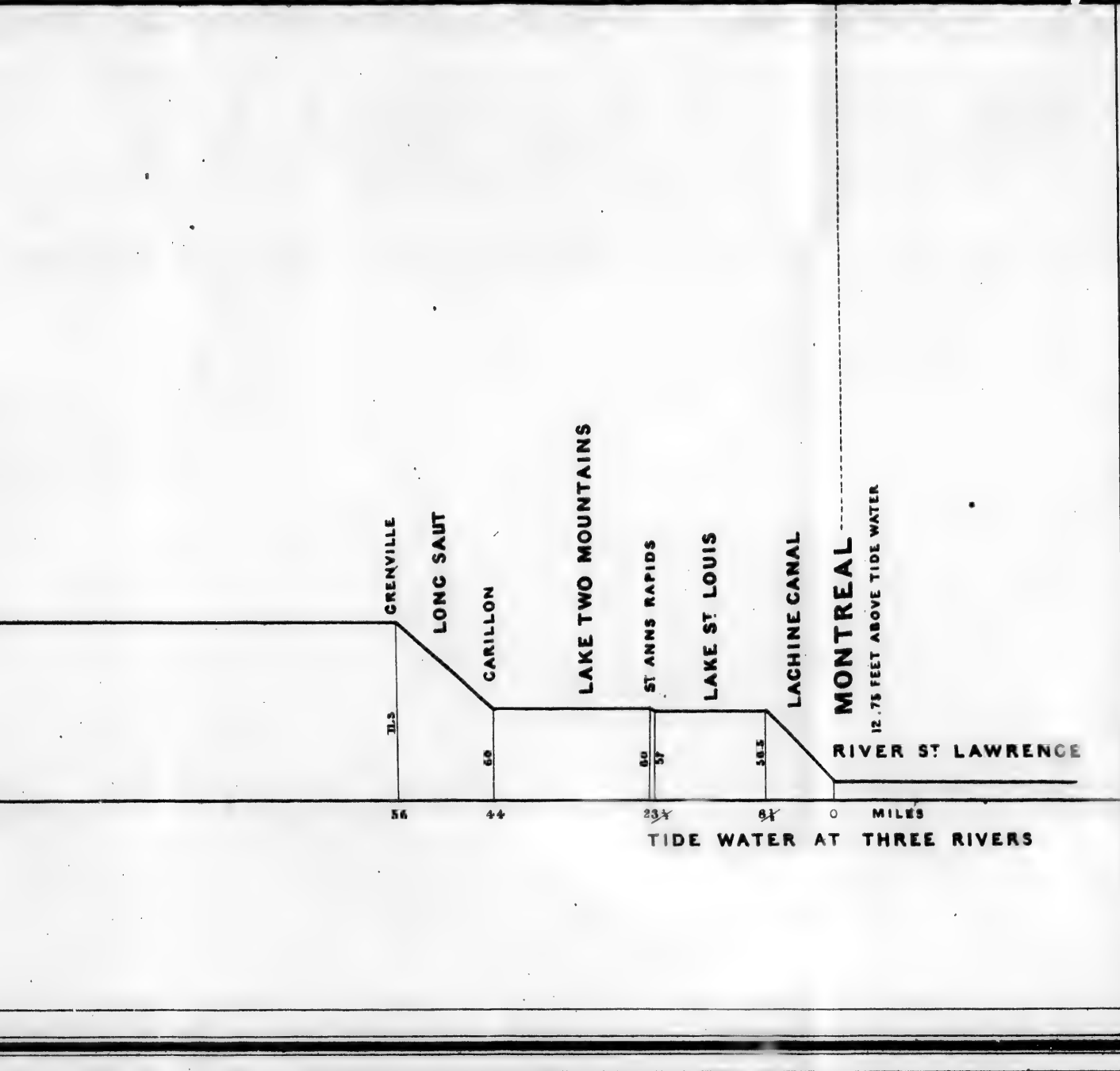
HORIZONTAL SCALE 20 MILES TO ONE INCH

VERTICAL SCALE 100 FEET TO ONE INCH



HORIZONTAL SCALE 20 MILES TO ONE INCH

VERTICAL SCALE 100 FEET TO ONE INCH



FRANCIS RIVER

GEORGIAN BAY

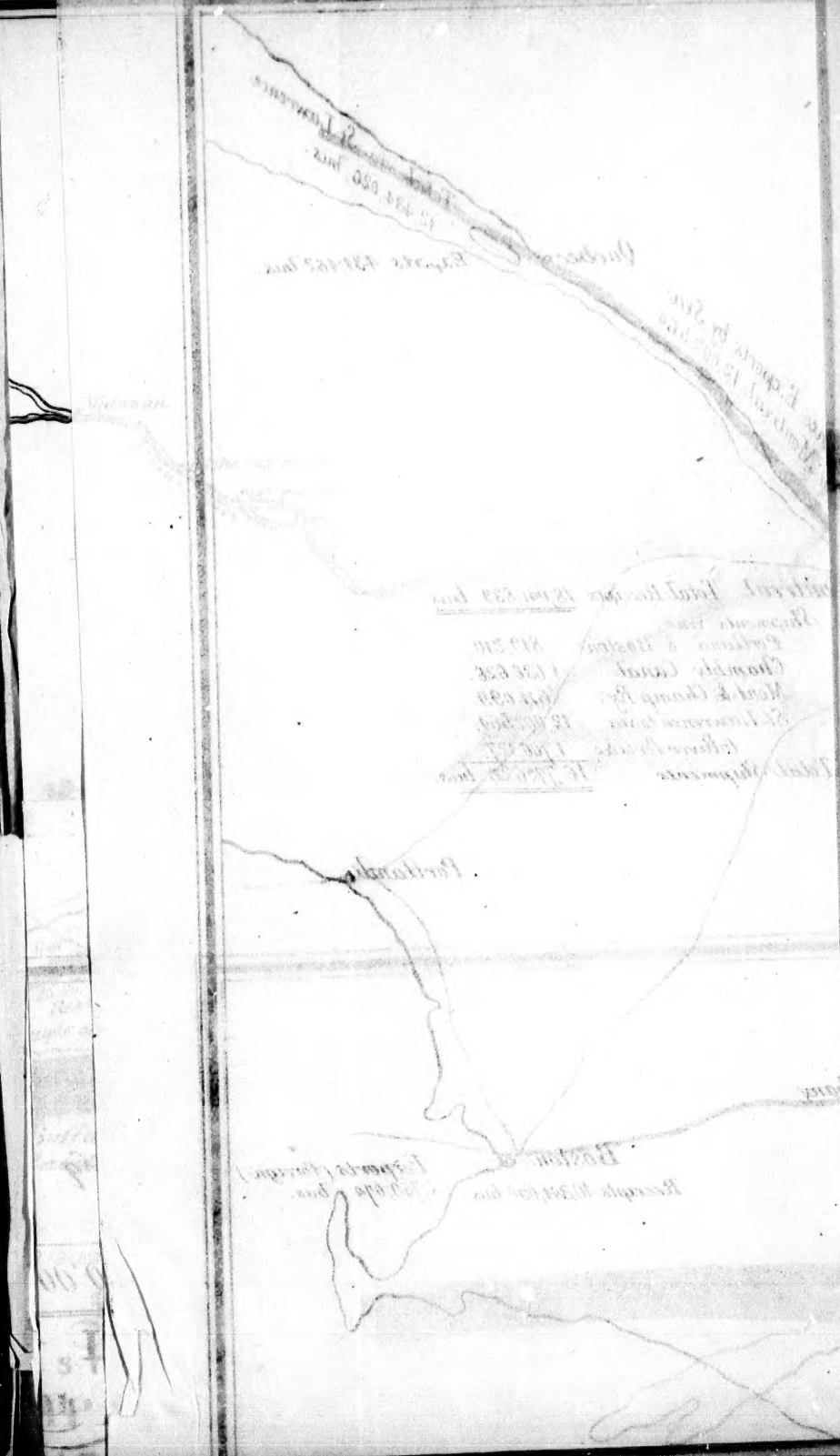
Lake Huron

CLARKES BAY

CLARKES BAY

CLARKES BAY

CLARKES BAY



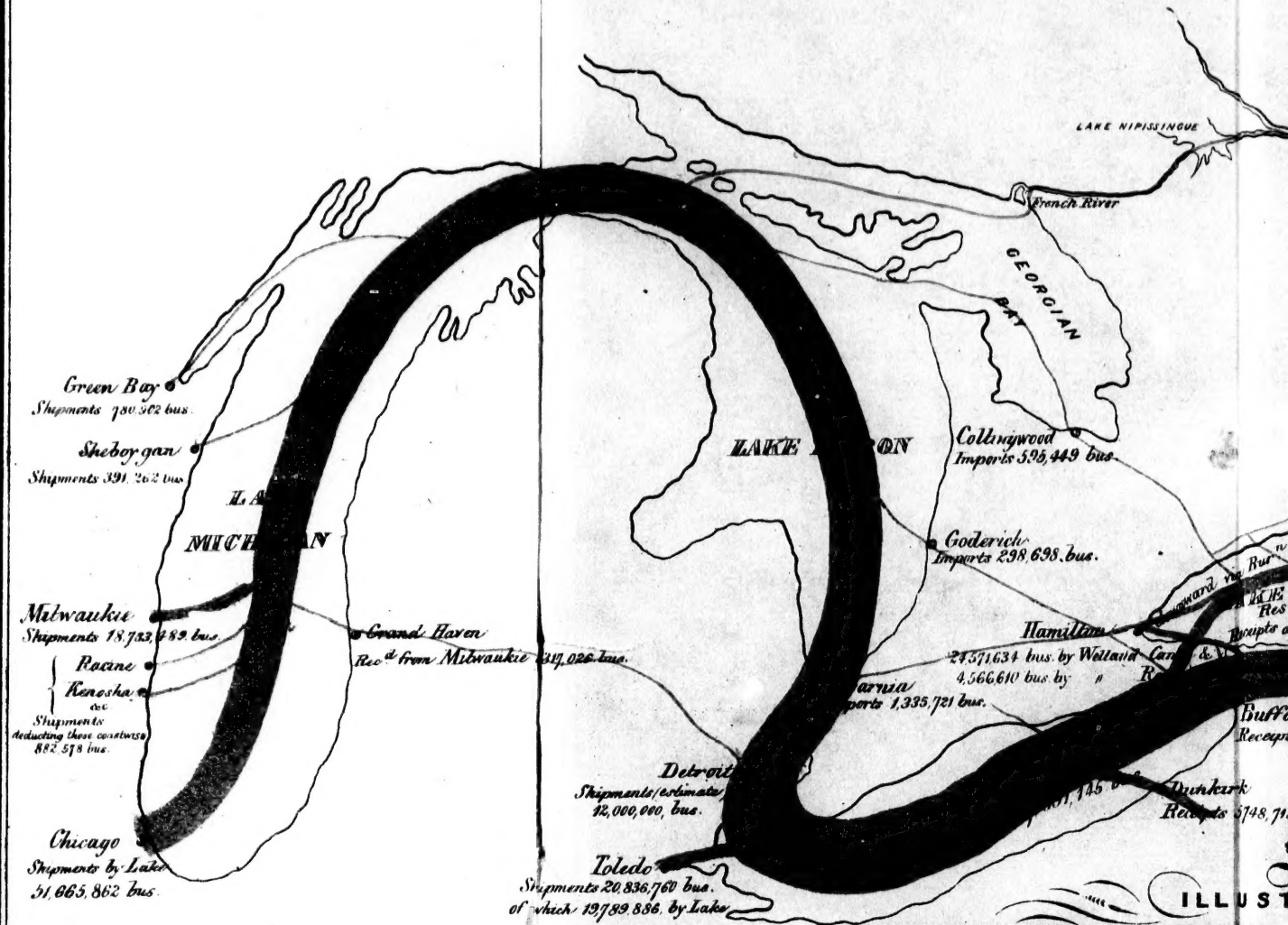


ILLUSTRATION
COURSE AND COMPASS
OF THE PRINCIPAL
GRAIN TRADE OF
THE GREAT LAKES

Scale 200,000,000

by

